CLAIMS

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What is claimed is:

2	an oscillator;		
3	a communications unit configured to receive communications data from a source,		
4	wherein the communications data includes time reference information; and		
5	a global positioning system (GPS) unit coupled to the communications unit,		
5	wherein the GPS unit is configured to calibrate the oscillator using the time reference		
7	information and to use the oscillator to acquire GPS satellite signals.		
1	2. The device of claim 1, further comprising an automatic frequency control		
2	(AFC) element coupled to a communications antenna to receive the time reference		
3	information, wherein the time reference information comprises a precision carrier		
4	frequency signal, and wherein the AFC is configured to generate a reference signal		
5	locked in frequency to the precision carrier frequency signal, wherein the reference signal		
6	is used to calibrate the oscillator.		
1	3. The device of claim 2, further comprising a phase comparator that receives		
2	the reference signal and an oscillator output signal and outputs a control signal that		
3	indicates an error in the oscillator output signal.		
1	4. The device of claim 3, further comprising a voltage controlled oscillator		
2	configured to receive the control signal and to output a GPS clock signal.		
1	5. The device of claim 4 further comprising a downconverter that receives		
2	the GPS clock signal and a GPS satellite signal and outputs an intermediate frequency		
3	signal.		
1	6. A mobile global positioning system (GPS) device, comprising:		
2	a first antenna for receiving GPS signals;		

1. A mobile communications device comprising:

- a downconverter coupled to the first antenna, wherein the first antenna provides the GPS signals to the downconverter, wherein the downconverter includes an input for receiving a GPS clock signal to convert the GPS signals from a first frequency to a second frequency;
- an oscillator coupled to the downconverter, wherein the oscillator outputs the GPS clock signal;
- 9 a second antenna for receiving a precision carrier frequency signal from a source; 10 and
- an automatic frequency control (AFC) circuit coupled to the second antenna to receive the precision carrier frequency signal and configured to generate a reference signal for generating the GPS clock signal.
- The device of claim 6, further comprising a phase comparator that receives the reference signal and an oscillator output signal and outputs a control signal to the oscillator that indicates an error in the oscillator output signal.
- 1 8. The device of claim 7, further comprising a receiver coupled to the second 2 antenna, wherein the receiver receives the precision carrier frequency signal, and further 3 receives a data signal containing satellite data.
- 1 9. The device of claim 8, wherein the satellite data includes Doppler data related to a satellite in view of the receiver.
- 1 10. The device of claim 9, wherein the satellite data further includes an identification of a plurality of satellites in view of the receiver and a corresponding plurality of Doppler information related to the plurality of satellites.
- 1 11. The device of claim 10, wherein the satellite data further includes 2 ephemeris data related to a satellite in view of the receiver.
- 1 12. A mobile communications device, comprising:
- 2 a GPS antenna for receiving GPS signals;

3	a downconverter coupled to the GPS antenna, wherein the GPS antenna provides		
4	the GPS signals to the downconverter;		
5	an oscillator coupled to the downconverter, wherein the oscillator provides an		
6	oscillator signal; and		
7	a communications unit, including,		
8	a communication antenna for receiving a precision carrier frequency		
9	signal from a source; and		
10	an automatic frequency control (AFC) circuit coupled to the		
11	communication antenna, wherein the AFC circuit provides a reference signal to calibrate		
12	the oscillator signal, wherein the oscillator signal is used to acquire the GPS signals.		
1	13. A personal communications device comprising:		
2	a telecommunications unit comprising a device selected from a group comprising,		
3	a code division multiple access (CDMA) device, a WCDMA device, a FDMA device, a		
4	OFDMA device, a UMTS-compatible device, a UWB-compatible device, a TDMA		
5	device, a WiFi device, a PDC device, an iDEN™ device, and a GSM device, wherein the		
6	telecommunications unit further comprises a clock source; and		
7	a global positioning system (GPS) receiver, wherein the GPS receiver comprises a		
8	voltage controlled oscillator for generating a GPS system clock signal based upon the		
9	clock source, and a feedback loop for controlling the voltage controlled oscillator,		
10	wherein the feedback loop comprises,		
11	a phase comparator for generating a control signal in accordance with the		
12	feedback signal and the clock source; and		
13	a loop filter for processing the control signal and outputting the control		
14	signal to the voltage controlled oscillator.		
1	14. The personal communications device of claim 13 wherein the clock source		
2	provides a common clock signal to the global positioning receiver and the		
3	telecommunications unit.		
1	15. The personal communications device of claim 13 wherein the clock source		

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comprises a crystal oscillator.

1	16. Th	e personal communications device of claim 13 wherein the frequency		
2	synthesizer comprises:			
3	a controlled oscillator having a variable output controlled by an input signal;			
4	a frequency divider coupled to receive the output of the controlled oscillator and			
5	responsive to the output to provide a frequency divided output signal;			
6	a phase compensation circuit coupled to receive the frequency divided output			
7	signal from the frequency divider, the phase compensation circuit responsive to the			
8	frequency divided output signal to provide an output which compensates for phase lag of			
9	the frequency divided output of the frequency divider; and			
10	a phase detector coupled to receive an output of the phase compensation circuit			
11	and the GPS system clock signal and to output a signal proportional to a difference in			
12	phase between the output of the phase compensation circuit and the GPS system clock			
13	signal to control the controlled oscillator.			
1	17. Ti	ne personal communications device of claim 13 wherein the divider is a		
2	fractional-N divi	•		
1	18. TI	ne personal communications device of claim 13 wherein the controlled		
2		•		
2	oscillator is a voi	tage controlled oscillator.		
1	19. T	he personal communications device of claim 13 further comprising a		
2	switch for selecta	able engaging the feedback loop to control the voltage controlled		
3	oscillator.			
1	20. T	he personal communications device of claim 13 wherein the switch is		
2	permanently set	during manufacture.		
1	21. A	method of clocking GPS receiver operations comprising the steps of:		
2	receiving	a clock signal from a clock source selected from a group comprising, a		
3	code division multiple access (CDMA) device clock, a WCDMA device clock, a FDMA			
1	device clock a C	DEDMA device clock a LIMTS-compatible device clock a LIWB-		

compatible device clock, a TDMA device clock, a WiFi device clock, a PDC device 5 clock, an iDEN™ device clock, and a GSM device clock; 6 generating a control voltage for controlling a frequency of an oscillator signal 7 generated by a voltage controlled oscillator based upon a feedback signal by a frequency 8 9 synthesizer; and generating a system clock signal of a particular frequency in response to the 10 control voltage, wherein the frequency synthesizer generating the feedback signal 11 12 includes, receiving the system clock signal; 13 frequency dividing the system clock signal by at least two integer values 14 to generate a fractional-N divider signal over a discrete time period; 15 generating a variably delayed signal based upon the fractional-N divided 16 signal within the discrete time period; and 17 comparing a phase of the variably delayed signal and a reference signal 18 and varying the system clock signal according to a detected phase difference. 19 A method of clocking GPS receiver operations according to claim 21, 1 22. wherein the clock source comprises a crystal oscillator. 2 A method of clocking GPS receiver operations according to claim 13, 23. 1 wherein the telecommunications unit comprises a CDMA based telecommunications unit. 2 A personal communications device comprising: 24. 1 means for receiving a telecommunications signal selected from a group 2 comprising, a code division multiple access (CDMA) device means, a WCDMA device 3 means, a FDMA device means, a OFDMA device means, a UMTS-compatible device 4 means, a UWB-compatible device means, a TDMA device means, a WiFi device means, 5 a PDC device means, an iDENTM device means, and a GSM device means; 6

7	means for receiving a global positioning system (GPS) signal comprising an			
8	oscillator for generating a GPS system clock signal and a feedback loop for generating			
9	and providing a control signal to the oscillator; and			
10	means for generating a clock source signal to be provided to the means for			
11	receiving a global positioning system (GPS) signal and the means for receiving a			
12	telecommunications signal, wherein the feedback loop comprises,			
13	a frequency synthesizer for generating a feedback signal; and			
14	a phase comparator for generating a control signal in accordance with the			
15	feedback signal and the clock source signal.			
1	25. A personal communications device according to claim 24 wherein the			
2	means for receiving a telecommunications signal comprises a code division multiple			
3	access (CDMA) based radio frequency receiver.			
1	26. A personal communications device according to claim 24 wherein the			
2	means for receiving a telecommunications signal includes the means for generating a			
3	clock source signal, and wherein the means for generating a clock source signal			
4	comprises a crystal oscillator.			